

SECTION 08610 - ROOF WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Fixed roof windows.
- B. Related Sections include the following:
 - 1. Division 7 Sections specifying roofing for mastic sealants applied at integral nailing flanges of roof windows.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide roof windows that have the following capabilities based on testing of manufacturer's standard units using test methods indicated:
 - 1. Air Leakage: As follows:
 - a. Air-Infiltration Test: ASTM E 283, at uniform static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa).
 - b. Air-Exfiltration Test: Test interior face of unit according to procedure in ASTM E 283, at uniform static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa).
 - c. Maximum Air Leakage (Infiltration and Exfiltration): 0.10 cfm/sq. ft. (0.000155 cms/sq. m).
 - 2. Water Penetration: As follows:
 - a. Water-Penetration Test: ASTM E 547; provide units that sustain minimum test pressure indicated without leakage.
 - b. Minimum Test Pressure: 6.24 lbf/sq. ft. (300 Pa).
 - 3. Structural Performance: As follows:
 - a. Design Wind Load: 40 lbf/sq.ft. (1915 Pa).
 - b. Physical Load Test: ASTM E 330; provide units that sustain minimum test pressure indicated without glass breakage, hardware damage, or permanent

- deformation causing unit malfunction or impairing unit operation and with residual deflection of members not exceeding 0.4 percent of their span.
- c. Minimum Test Pressure: 150 percent of design wind load.

4. Thermal Conductance: As follows:

- a. Test Procedure: NFRC 100.
 - b. Maximum U-Value: 0.73 Btu/sq. ft. x h x deg F (4.15 W/sq. m x K).
- B. Provide roof windows capable of withstanding live loads and snow loads indicated without failure of materials or permanent deformation.

1.4 SUBMITTALS

- A. Product Data: For each type of roof window specified. Include the following:
- 1. Construction details relative to materials, dimensions of individual components, profiles, and finishes.
 - 2. Layout and installation details, including anchors.
- B. Product Test Reports: By a qualified testing agency indicating current roof window complies with requirements.
- C. Maintenance Data: For roof windows to include in maintenance manuals specified in Division 1.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain roof windows through one source from a single manufacturer.
- B. NWWDA Certification: Provide roof windows bearing NWWDA's "Hallmark Program" label, certifying compliance with requirements of NWWDA I.S.7.
- C. Product Options: Drawings indicate size, profile, and dimensional requirements of roof windows and are based on the specific products indicated.

Products of other manufacturers with equal performance characteristics may be provided.

1.6 WARRANTY

- A. General Warranty: Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

- B. Manufacturer's Warranty on Roof Windows: Written warranty, signed by manufacturer agreeing to repair or replace roof windows that fail in materials and workmanship within minimum warranty period indicated below. Failures include the following:
1. Dust, moisture, or film on interior glass surfaces of insulating-glass units.
 2. Excessive deflection.
 3. Excessive air infiltration.
 4. Water leakage.
 5. Deterioration of finishes and materials beyond normal weathering.
 6. Malfunctioning of operating hardware.
 7. Minimum Warranty Period:
 - a. Glass: 20 years from date of Substantial Completion.
 - b. Frame: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Andersen Windows, Inc.
 2. Pella Corporation.
 3. Velux-America Inc.

2.2 MATERIALS

- A. Wood: Comply with NWWDA I.S.7 requirements.
1. Provide ponderosa pine or other suitable lumber kiln dried to moisture content between 6 and 12 percent at time of machining.
 2. Provide visible interior frame and sash parts (where applicable) free of unsound knots, pitch pockets, or surface checks larger than 1/8 inch deep by 2 inches long (3 mm deep by 50 mm long).
 3. Provide visible interior frame and sash parts (where applicable) indicated to receive transparent finish free of blue stain.
 4. Provide wood with preservative treatment applied after machining according to NWWDA I.S.4 requirements.
- B. Extruded Aluminum: ASTM B 221 (ASTM B 221M); alloy and temper recommended by manufacturer for use and finish indicated but with not less than strength and durability properties of alloy 6063-T5.
- C. Aluminum Sheet: ASTM B 209 (ASTM B 209M); alloy and temper recommended by manufacturer for use and finish indicated.

2.3 COMPONENTS

- A. Roof Window Frame: Manufacturer's standard curb-type frame of the following material:
 - 1. Aluminum-clad wood.
- B. Roof Window Sash: Manufacturer's standard sash of one of the following materials:
 - 1. Aluminum.
 - 2. Aluminum and wood.
 - 3. Glass-fiber-reinforced proprietary material.
- C. Flashing: Manufacturer's standard flashing system for application indicated of one of the following materials:
 - 1. Aluminum.
 - 2. Vinyl.
 - 3. Rigid vinyl or aluminum nailing flange formed into frame.
 - 4. Copper.
 - 5. Provide auxiliary rain diverter at roof window head.
- D. Insulating Glass: Clear, sealed, insulating-glass units that comply with Division 8 Section "Glazing," in manufacturer's standard thickness and as follows:
 - 1. Type: Inboard and outboard lites of fully tempered glass.
- E. Glazing Seal: Manufacturer's standard extruded-vinyl or -butyl glazing gasket, or butyl or neutral-cure silicone sealant.
- F. Anchors, Clips, and Fasteners: Manufacturer's standard noncorrosive anchors, clips, and fasteners.
 - 1. Provide units of sufficient strength to withstand physical-load-test pressure indicated.

2.4 FABRICATION

- A. Roof Windows: Provide weathertight units complete with flashing, anchoring devices, and operating hardware for venting units.
 - 1. For wood roof windows, comply with NWWDA I.S.7.
 - 2. Provide condensation gutter or other means to hold condensate (moisture) or drain it to exterior.

2.5 ALUMINUM FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying finishes.
- B. Color-Coated Finish: Provide manufacturer's standard baked finish complying with coating manufacturer's written instructions for pretreatment, application, baking, and minimum dry film thickness.
 - 1. Color: Manufacturer's standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings and adjacent areas before installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with manufacturer's written installation instructions for installing roof windows, hardware, operators, and accessories.
 - 1. Set units true in line, without warp or rack in frame or sash, and anchored securely in place.
 - 2. Install flashing to provide a weathertight seal.

3.3 ADJUSTING

- A. Adjust operating sash and hardware for tight fit at contact points and weather stripping. Provide unencumbered operation and weathertight closure.
- B. Adjust shades to hang true in line without rack. Provide unencumbered operation.

3.4 CLEANING AND PROTECTING

- A. Clean exterior and interior of units immediately after installation according to manufacturer's written recommendations.
- B. Protect units from damage or deterioration until date of Substantial Completion.

END OF SECTION 08610